

**Marine Resource  
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**Fisheries governance in the eastern  
Caribbean: network and institutional  
perspectives on policy.**

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# Paper for MARE Proceedings

## FISHERIES GOVERNANCE IN THE EASTERN CARIBBEAN: Network and institutional perspectives on policy

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*ABSTRACT* The governance of small-scale fisheries in the eastern Caribbean often lacks the interactions among stakeholders needed to sustain fisheries management. Weak institutions, poor leadership, inadequate information and limited capacity are reasons given for low levels of government and non-governmental stakeholder engagement in dialogue and action related to fisheries. Small, low status government fisheries units have tenuous links to public sector policy and resource users. Other stakeholders, such as in tourism, may be more connected to policy, marginalizing small-scale fisheries even in the context of integrated coastal management. These issues may be researched from institutional and network perspectives, and addressed by building institutional capacity and learning along with networks and policies for improving interactive governance.

### Introduction

In recent years there has been increasing interest in fisheries governance (Bavinck et al. 2005). This stems from the need for a broader perspective on the sustainable use of marine resources than can be provided by fisheries management (Kooiman et al. 2005; Wilson 2006). It is the case whether management is of the conventional, top-down, centralised, command-and-control type that has recently fallen into disrepute (Berkes et al. 2001), or employs bottom-up, decentralised, participatory and more collaborative approaches. Much attention has been on the governance of small-scale fisheries (SSF) due to their complexity and the obvious challenges that they pose to being managed successfully (Mahon et al. 2005; Fanning et al. 2007). The concepts and approaches of interactive governance have been promoted as being particularly suited to these fisheries (Bavinck et al. 2005), but they need to be tested by practical application in order to truly prove their worth (Mahon et al. 2007). Locations at which there is a high degree of complexity in the fisheries (social-ecological) systems, and where little attention has previously been paid to fisheries governance, may prove especially enlightening in the process of investigating and testing interactive governance.

One such location is the eastern Caribbean. Many people in the Caribbean depend on policies that enable the good governance of marine resources for their livelihoods and for development to be sustainable, especially in coastal communities. The governance of SSF in the eastern Caribbean appears to lack the interactions among stakeholders needed to sustain fisheries management (Chakalall et al. 2007). Weak institutions, poor leadership, inadequate information and limited capacity still contribute to low levels of government and non-governmental stakeholder engagement in dialogue and action related to fisheries. Small, low status government fisheries units have tenuous links to public sector policy and resource users. Other stakeholders, such as those in tourism, may be more connected to policy and can marginalise small-scale fisheries even in the context of integrated coastal management (ICM).

We argue that these issues may be researched from network and institutional perspectives. They can also be addressed, at least in part, by building institutional capacity and adaptive learning, along with strengthening networks and policies for improving interactive governance. To do this requires action research and development using concepts of complex adaptive systems (CAS) and social-ecological systems (SES) combined with empirical lessons learned from real-life scenarios and case studies.

In this paper, after outlining the issues and approach, we examine some fisheries governance concepts with the assistance of policy-related scenarios from the eastern Caribbean. The final section reaches tentative conclusions on the future prospects for this work in progress that is part of the Centre for Resource Management and Environmental Studies (CERMES) project on 'Marine Resource Governance in the Eastern Caribbean' (MarGov Project).

## Issues and approach

Broadly speaking, governance is the whole of public as well as private interactions taken to solve societal problems and create societal opportunities. It includes the formulation and application of principles guiding those interactions and care for institutions that enable them (Bavinck et al. 2005). Governance, like management, should ideally be adaptive (Folke et al. 2005). Adaptive governance is about managing with and for change, rather than against it (the way of conventional command and control). In the context of SES it involves dynamic institutional and governance structures and processes that permit key management interventions at the appropriate scales and times (Anderies et al. 2006). Interactive governance is concerned with the total set of interactions between the governing system and the system to be governed, using images, instruments and action as components to describe and analyse these interactions (Kooiman et al. 2005).

What then is the situation with fisheries governance in the eastern Caribbean? The fisheries issues outlined here are not unique to SSF or the eastern Caribbean, but they form an important context for formulating policy and taking action. There are numerous small fisherfolk organisations (FFOs) operating mainly at the local, rather than national, level with inadequate capacity and leadership in most countries. However, the majority of resource users and postharvest workers are not formally organised. This complicates governance. National government authorities and/or statutory corporations typically have responsibility for fisheries, tourism, trade, transportation, foreign affairs, public health, environment, marine parks and protected areas. These diverse bodies are seldom coordinated on marine policy matters at the national level, and often the fisheries authorities have the least capacity and power in the public sector. Coastal SSF are in danger of becoming marginalised by tourism in several locations. Bridging the gap between government bodies and civil society are multi-stakeholder arrangements such as fisheries advisory committees (FACs) that are intended to inform policy and serve as co-management initiatives to some extent. Few are functioning well. Although resource users may be represented on FACs, the ties between members of these bodies and constituents in fishing industries are not usually strong (McConney et al. 2003b).

The introduction of fisheries management planning in the English-speaking Caribbean (McConney and Mahon 1998) and fisheries governance in the region (Chakalall et al. 1998) began to receive attention in the late 1980s. Lessons learned from the practical experiences of trying and testing coastal fishery management and co-management at scales from community to national level in participatory action research have contributed to a conclusion that Caribbean coastal and marine resource governance institutions are often poorly developed with institutions that neither interact much with each other nor engage fisheries policy (Mahon et al. 2003; Pomeroy et al. 2004; McConney et al. 2003b).

At sub-regional and regional scales, experience with governance over shared and highly migratory fish stocks of international significance (Singh-Renton et al. 2003; Mahon and McConney 2004b), and the establishment of an indigenous regional fisheries organisation with the potential to become a management or coordinating body (Haughton et al. 2004), has demonstrated that governance issues in this region are highly complex and regional fisheries policy decision-making institutions are not well developed. Nested cross-scale institutions are said to confer resilience (Ostrom 2005), but instead we see few links between higher level organisations in the eastern and wider Caribbean. Within organisations the ties between countries and fisheries authorities are often also weak.

The main sub-regional and regional inter-governmental organisations referred to above with fisheries interests in the eastern Caribbean include the Organisation of Eastern Caribbean States (OECS) and its Environment and Sustainable Development Unit (ESDU); the Caribbean Community (CARICOM), and its Caribbean Regional Fisheries Mechanism (CRFM); and the Western Central Atlantic Fishery Commission (WECAFC) of the United Nations Food and Agriculture Organization (FAO). A recent initiative that encompasses all of these and others in the Wider Caribbean is the Caribbean Large Marine Ecosystem (CLME) Project that focuses on governance. It is entitled "The sustainable management of the shared living marine resources of the Caribbean Large Marine Ecosystem and its adjacent region" and is implemented through the Intergovernmental Oceanographic Commission Regional Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE). The CLME preparatory investigations have confirmed the prevailing complexity and deficiencies of fisheries governance (CLME 2007). Issues including scale,

resilience, adaptation, capacity, power, participation, networking, politics, equity, conflict and others abound in eastern Caribbean marine resource governance as elsewhere (Mahon et al. 2007).

A work in progress aimed at investigating these issues, and addressing some in terms of policy advice and engagement, is the four year CERMES MarGov Project funded primarily by the International Development Research Centre (IDRC) of Canada from 2007. The project is for research on understanding governance related to marine small-scale fisheries and coastal management in the eastern Caribbean. At its core is to be a research framework derived from CAS and SES with methodological emphasis on network and institutional analysis at different scales and levels grounded in currently relevant case studies of resource governance that pay close attention to policy cycles in governance (CERMES 2007).

While analysing marine resource governance, the MarGov research also focuses on practical policy by trying to build adaptive capacity through learning, strengthening networks for improving policy and promoting good interactive governance. This is to be achieved through participatory research where possible, communication of findings and recommendations to all levels of the governance structures in the study area, and by actively engaging stakeholders to initiate the process of policy change or test new policy. It is an ambitious undertaking still in its earliest stages prior to field research. However, there has been dialogue with key actors and organisations, and some governance scenarios that seem worth investigating have been identified (CERMES 2007).

### **Key concepts and some scenarios**

We briefly describe a few fisheries scenarios in the context of some key concepts in interactive governance. The scenarios concern transboundary tuna fisheries, CRFM structure and function, scaling up fisherfolk organisations (FFOs) and sea urchin fishery co-management. The scenarios may later be developed into case studies for the research. Many of the points raised are based on the authors' observations and experience of being involved in fisheries governance for over two decades. They are to be investigated in the course of the project and should be viewed at this point as tentative rather than evidence.

#### *Size and scale*

Scale is a concept common to most disciplines although used with slightly different meaning in some cases. Ecological scale is primarily spatial and temporal. Sociological scale adds features of human organisation and interaction such as jurisdictional, institutional and network among many. Combining them, SES function at multiple scales, creating more complex and dynamic social-ecological interactions and feedback loops among both the human and ecological components (Cumming et al. 2006).

Interactions may occur within one scale (i.e. cross-level) or across different scales (i.e. cross-scale). Cash et al. (2006) hypothesize that the dynamics of cross-level and cross-scale interactions are affected by the interplay between institutions at multiple levels and scales. They suggest that co-management and other types of cross-scale governance facilitate solutions to complex system problems. Berkes (2001, 2006) also addresses the importance of cross-scale governance. He notes that co-management institutions provide ways in which to approach scale-related questions and deal with linkages in complex adaptive systems. He observes that community-based resource management confronts multiple levels of governance and external drivers of change.

Cumming et al. (2006) note that scale mismatches occur when the scale of environmental variation and the scale of social organization responsible for management cause disruptions in SES functions, inefficiencies occur, and/or important components of the system are lost. They suggest that, in natural resource management systems, SES scale mismatches result in losses of adaptive capacity and resilience.

The eastern Caribbean arc of Lesser Antilles islands stretch from the Virgin Islands in the northwest to Grenada and Barbados in the south and east. While the small-scale fisheries in this island chain are similar, there are also important differences. The resources range from sedentary inshore species, which may go beyond community or national boundaries only through larval dispersion, to highly migratory species such as tunas that are fished, traded and managed internationally. For most tuna fisheries there is an obvious mismatch between ecological management units and maritime jurisdictions in the eastern Caribbean (Berkes 2006). Even for regional resources such as flyingfish there is not yet a

management arrangement that matches the scale of the resource distribution. Caribbean local, national and regional fisheries organisations are vulnerable, rather than resilient, to external shocks from international fisheries policy-making arenas for trade and management. Institutions for collective representation and negotiation are absent.

Regionally harmonised national fisheries legislation and fisheries management plans in various states of completion or implementation reflect the scaling down of international instruments that range from the binding Law of the Sea (UNCLOS) to the non-binding Code of Conduct for Responsible Fisheries (CCRF). This re-scaling can provide a useful legal-institutional setting for subsidiarity in governance and policy. However, in most of these small countries the fisheries authorities tend to still be centralised with little devolution of power and authority. In a few of them (e.g. Dominica and St. Lucia) there has been limited delegation of decision-making to local area management authorities particularly for marine protected areas (MPAs). However, community-based marine resource management is not a strong feature of many governance arrangements and there is a need to consider further subsidiarity in governance, perhaps as a component of implementing the CRFM's Common Fisheries Policy and Regime. The structure and operation of CRFM institutions determine policy through their interactions.

The larger scales of operation and jurisdiction of the CRFM (including the OECS members), WECAFC and the CLME project are also pertinent to fisheries governance. The eastern Caribbean sub-region represents a smaller spatial scale at which, when compared to the wider Caribbean or even all of CARICOM, one can expect changes to be implemented effectively and outcomes observed quickly. However, due to the complexity of the region there are challenges to scaling up. Mahon and McConney (2004a) suggest that fisheries governance on a small scale should not be a shrunken version of large-scale developed country arrangements, and neither can small successes simply be expanded to fit a larger space. There must also be changes in the structure and process of fisheries governance especially as situations become transboundary or otherwise increase in complexity due to increasing or crossing scales (Wilson 2006).

This point is also illustrated by the CRFM initiative to support the formation of a regional network of national FFOs. Several structural options exist, but taking the spatial scale of the Caribbean into account and the challenges this poses for communication and all types of interaction, an arrangement that allows for sub-regional or smaller clusters of countries and groups may prove most appropriate (McConney 2007). It could enable the self-organisation or strengthening of fairly homogenous groups with shared interests and less conflict, while building capacity on a sustainable scale.

Scale, with appreciation of transboundary issues, is of particular significance to policy in the Small Island Developing States (SIDS) of the Caribbean and their perspectives on marine resource governance. The Barbados Plan of Action (BPOA), supplemented by the Mauritius Strategy in 2005, addresses issues of coastal and marine resources, capacity, cooperation and more. In the eastern Caribbean a policy document of particular interest is the recently revised St. George's Declaration of Principles for Environmental Sustainability in the OECS which contains provisions for resource governance. In addition there is a host of CARICOM instruments and declarations. There is a need to investigate if and how existing policy instruments fit the emerging concepts of interactive governance and whether new perspectives on governance will assist their successful implementation (Chakalall et al. 2007).

### *Resilience and participation*

Resilience is the capacity of a system to experience shocks or perturbations while retaining essentially the same function, structure, feedbacks, and therefore identity. The more resilient a system is, the larger the disturbance it can absorb without shifting into an alternate regime (Berkes and Folke 1998). Such a shift may be reversible or irreversible either absolutely or relative to the time scale of interest. Whether a particular regime is 'good' or 'bad' is largely a value judgment that may vary with perspective or outlook, hence encompassing a number of variables. Resilience may not be desirable if a governance regime is undesirable, so knowing what increases or reduces resilience is important for adaptive governance (Walker et al. 2006). In SES, ecosystem goods and services interact with a collection of users with different technologies, interests, and levels of power (Lebel et al. 2006). Interventions that aim to alter resilience in social-ecological systems soon confront governance issues.

In the eastern Caribbean SSF literature there is very little that speaks to the concept of resilience unless it is interpreted as being embedded in terms such as sustainable use and development. It appears to often be assumed, especially by resource users, that the abundance of marine resources will fluctuate widely regardless of human interventions to either exploit or manage them. Overfishing has depleted

several inshore resources, perhaps irreversibly, and will continue to do so unless more drastic policy and management interventions are implemented. Differences in culture, beliefs and norms among stakeholders need to be investigated in relation to risk and uncertainty if resilience is to be understood in the context of coping strategies, attitudes and other behaviour.

Participation is said to build trust, and collaborative deliberation leads to the shared understandings needed to mobilize and self-organize in complex systems (Lebel et al. 2006). Participatory fisheries management and governance are still in their early stages in the eastern Caribbean (Chakalall et al. 1998; McConney and Mahon 1998; Chakalall et al. 2007). It is evident from the CRFM and WECAFC attempts to strengthen their institutions, and the accepted need for the CLME project, that new options for governance are going to be tried and tested as a matter of urgency. It is not clear what interactions will shape these initiatives.

For example, one may postulate that a resilient fishery governance structure and process should involve many levels of organisational stakeholders from the local or community-based to the sub-regional in the eastern Caribbean. However, at present there is no institution that allows for this except perhaps the Caribbean Fisheries Forum of the CRFM. Bottom-up participation in regional and sub-regional intergovernmental organisations is poorly institutionalised below the level of national fisheries authorities. It may be, therefore, that to build resilience into tuna management in the eastern Caribbean and the CRFM would require greater resource user participation at the local and national levels of the fisheries in the CRFM Member States.

### *Networks and institutions*

In the context of this paper, networks consist of nodes and links that represent components and the relations between components in a given SES. Institutions are mechanisms of social structure governing the actions of individuals and groups through systems of rules and norms that shape human behaviour. The attributes of the SES that are of interest to the study determine the network structure and influence institutional analysis. Relational attributes may include trust, power, information, funds and many others. It has been argued that studies on resilience in SES lack a clear analytical framework, and that a network perspective with emphasis on dynamic and heterogeneous systems might serve this purpose (Janssen et al. 2006). This is because network analysis focuses on how the structure of interactions between SES components and the ways in which the structure of nodes and links, and the flows contained within, affects the performance of the system at a variety of scales. Network analysis has been applied to both social systems and ecological systems, combining qualitative and quantitative information, but seldom to integrated SES and governance (Bodin 2006).

Janssen et al. (2006) recommend that network analysis be used to compare case studies relevant to resilience using the typology of nodes, links, ties and other network properties. In their analyses they focus on connectivity (link density and reachability) and centrality, making the point that there is no 'right' depiction of SES networks, only models that are more or less useful from a particular perspective or for analysing a specific problem. They also warn that network architecture or structure is of little value unless the flows through the network are also known. Finally, they conclude that there is no simple relationship between network properties and resilience. For example, a dense network may be good for the rapid diffusion of a beneficial innovation, but it may also spread unwanted practices such as irresponsible fishing and constrain individual managers from experimentation for adaptation if close-knit cliques are formed.

Network studies on marine resource governance in the Caribbean are not common, but there are a few examples. Tompkins et al. (2002) used institutional network analysis to investigate coastal management in Trinidad and Tobago. Adger et al. (2005) examined cross-scale networks for resource co-management in Tobago, concluding that the structure of cross-scale interactions via networks is relevant to the resilience of SES. McConney (1997) used qualitative social network analysis to examine strategies for coping with uncertainty in fisheries management planning in Barbados. Mahon and others have undertaken unpublished network studies of the numerous small NGOs and CBOs in the Grenadines islands in relation to marine biodiversity and sustainable development, using a CAS perspective to look closely at how social and organizational network and institutional arrangements affect the capacities of these organizations. This research investigates their ability to self-organise and whether the policy environment enables or constrains this ability as power is exercised in governance interactions.

The CRFM has been depicted as a network of stakeholders, although the term was used rather loosely (Haughton et al. 2004). The intention was for nodes (countries or organisations) within the CRFM

network to take the lead on various issues by using regional teams, making the CRFM polycentric and perhaps more adaptable while building indigenous capacity. Instead, activity has primarily been centrally coordinated or implemented by the CRFM Secretariat, often in conjunction with extra-regional consultants. It is evident that the CRFM is not yet operationalising the network concept used in its design and it would be informative to see if a more decentralised but interactive approach, as conceived in its design, could improve governance or make it more resilient. At present there seem to be few institutions within the CRFM geared towards learning lessons for adaptation. Forming such learning institutions could be a first step towards assembling evidence to support policy changes in the CRFM or elsewhere (Mahon et al. 2002).

Cultural beliefs and institutions are also of importance in governance interactions. Sall (2007) describes the environmental fatalism of resource users who expect loss of biodiversity, accept resource depletion and have learned to live with natural cataclysmic disasters. For them, even those without religious beliefs, there may be a deeply culturally embedded attitude that resource management by humans is irrelevant. Their conservation ethics may stem more from respect for nature than buy-in to any form of management. Persons with the belief that fisheries are inherently unmanageable may choose to participate in management institutions for a variety of reasons that are incompatible with the aims of governance. It is likely that dense networks of such actors, as may occur at the local or community level, may be quite resilient to attempts to change beliefs and behaviours in fisheries such as those for sea urchins or other inshore resources.

The international management of tunas has been described from a Caribbean governance perspective (Singh-Renton et al. 2003; Mahon and McConney 2004b) and with network dimensions added (Berkes 2006; McConney et al. 2007). The CRFM Secretariat acts as a focal point for scientific information exchange with the International Commission for the Conservation of Atlantic Tunas (ICCAT), but some countries are also Contracting Parties in their own right. Much of the regional discussion of ICCAT centres on the CRFM Member States wanting more say in the management of tunas and tuna-like species in their waters. This includes the stocks actively managed by ICCAT, but especially those that have so far received little attention (Singh-Renton et al. 2003). It would be informative to map out the networks and interactions concerned with tuna exploitation and management in the eastern Caribbean. Both the fish chain and management networks have strong extra-regional drivers. However, it appears as if the regional component of the management network is deficient despite the stated need to maintain options for expanding fisheries for large pelagics as a contributor to economic development (Mahon and McConney 2004b).

Fisheries governance arrangements in the eastern Caribbean can be depicted from an SES perspective as networks of people and organisations connected by ecosystems. In this scenario the large pelagics, flyingfish and other fisheries science working groups connect the countries and their fisheries authorities in data sharing and some level of collaborative analysis with the aim of making management recommendations or tendering scientific advice for policy decisions. However, even though there would appear to be widespread interest in the principle of regional or sub-regional fisheries governance, the data collected and shared are often inadequate for fishery assessment and the working groups struggle to tackle fishery science issues, usually without input from resource users, and with limited interaction generally.

There are seemingly fairly well developed sub-regional non-management social networks among groups of fisherfolk in various islands who visit each other for festivals and provide assistance when natural disasters strike (such as Hurricane Ivan in Grenada). Although national and local fisherfolk organisations are typically financially weak with organisational issues of leadership, there exist strong informal social networks through which fishing information and other resources are exchanged. It is not clear why formal organisations seem to be much less successful than informal networks, and if or how networks may be used to integrate fisherfolk into the governance system without viable formal organisations or community-based institutions.

One response is to embark on conventional capacity building and institutional strengthening, but within this are a number of potentially problematic issues. For example, the CRFM Secretariat is currently implementing an ambitious project to form or strengthen, and then network, national FFOs within a very short project period. Given the experiences with formal organisations, it has been suggested that network structures should be used at both the national and regional levels (McConney 2007). For the eastern Caribbean sub-region this may mean forming networked northern (leeward) and southern (windward and Barbados) island clusters with ties to each other and to the Caribbean Fisheries Forum. However, since

the NFOs are not likely to have much power within the Forum (perhaps neither singly nor collectively) they may also want to develop links to potential champions in high-level policy decision-making bodies such as the CRFM Ministerial Council to add top-down pull to their bottom-up thrusts. The fact that FFOs have little experience to date of engaging policy at the sub-regional level speaks to the need to develop such capacity and partnerships.

#### *Adaptive capacity and co-management*

Folke et al. (2002) identify critical components of adaptive capacity and resilience that interact across temporal and spatial scales during periods of change and reorganization. These include learning to live with change and uncertainty; nurturing diversity for resilience; combining different types of knowledge for learning; and creating opportunity for self-organization towards achieving social-ecological sustainability.

Adaptive capacity reflects learning and the ability to experiment and foster innovative solutions in complex social and ecological systems (Armitage 2005). To learn and innovate in the process of self-organisation and adaptation, and systems must be open to and tolerant of failure (Anderies et al. 2006). Yet, in the political reality of most governance arrangements, experimental policy (with the risk of failure) is seen as being prohibitively costly in many respects. However, adaptive network governance and strengthening adaptive capacity to manage resilience are critical to sustainable development (Lebel et al. 2006; Carlsson and Sandström 2006).

The term co-management refers to a continuum of arrangements that rely on various degrees of power and responsibility sharing between governments and local communities (Pinkerton 1989; Pomeroy et al. 2004). A wide range of studies has illuminated the advantages and challenges of co-management as a strategy to improve the understanding of complex multi-interest problems and their potential solutions in SES (Pomeroy et al. 2001; Cash et al. 2006). Co-management is adaptive where ecological knowledge and institutional arrangements are tested and revised in a dynamic, ongoing, self-organised process of learning-by-doing (Folke et al. 2002). These processes involve cross-scale linkages among diverse stakeholders, often at the level of the ecosystem in cases of resource management on a large scale, and may help to build resilience in social-ecological systems (Olsson et al. 2004). Armitage (2005) identifies factors that influence adaptive capacity at the local level and that are relevant to co-management.

Conventional capacity building, often through a narrow spectrum of training, may achieve only moderate success. Building capacity through exchanges may not work where networks are weak in critical areas such as ties to actors or organisations with the skills that are in most demand. Constraints on resource stakeholder empowerment and collective action are partly products of world views and organizational climates that promote or accommodate fragmentation, particularly in response to conflict. Institutions for conflict management and consensus-building seem to be poorly developed in eastern Caribbean fisheries governance. Interactions are structured to avoid or suppress conflict rather than to deal with it constructively.

In the eastern Caribbean, building capacity for natural resource governance is a typical aim of development interventions. These interventions have focused more on enhancing some assets (human, physical, financial) than others (social, institutional). Patterns of capacity being built and then quickly becoming eroded or irrelevant are repeated in time and space. The capacity to adapt has received relatively little attention, and the connection of adaptation to co-management has not been prominent. Strengthening FFOs to become policy-engaging institutions, as described previously in the CRFM initiative, is a major challenge and perhaps a role for which they are ill-suited.

Co-management initiatives are more recent than the introduction of conventional management, and are generally only at the pre-implementation stage in the eastern Caribbean (Pomeroy et al. 2004). Even at this stage it is not too soon to investigate what governance institutions are likely to facilitate desirable, resilient SES in co-management. This information should be fed into the design of the institutional experiments associated with strengthening of WECAFC or drafting the CRFM Common Fisheries Policy and Regime. The latter has already started to recognise socio-economic issues and linkages (networks), but has not yet addressed adaptive capacity and co-management.

The promotion of co-management may be viewed as a positive step towards enabling policy. It can give stakeholders such as those in SSF the opportunity to organise themselves into bodies that are heard in the policy domain and can effect change through collaborative decision-making. However, recent Caribbean case studies have revealed that the conditions favouring successful co-management are not strong in the region (McConney et al. 2003a, 2003c; Pomeroy et al. 2004). For enabling policy to foster

adaptive co-management as part of SSF governance there may be a need for decentralisation. However, some SSF actors may be wary of decentralisation if it is likely to make them more vulnerable to the interventions of more powerful actors. For example, an FFO may fear that a fisheries policy enabling decentralisation and local decision-making may allow tourism interests to exert more influence at the local level or periphery than on the core or centre of the fisheries authority. It is a matter of power redistribution.

Scenarios of community-based co-management of sea urchin fisheries in Barbados and St. Lucia have been much studied (Smith and Berkes 1991; George and Joseph 1999; McConney et al. 2003c; Mahon et al. 2003). Initiatives in St. Lucia started first and were more comprehensively community-based than the experiments in Barbados. In both countries the fisheries authorities set up systems for collaborating with fishers to monitor urchin abundance and then use these observations to advise policy-makers on if and when the fishery should be opened. The initiatives have faltered, rather than strengthened, in both countries but remnants of the co-management institutions remain. It is not clear why the systems did not adapt to become sustainable, but within them were networks of resource users, management authorities and other interested stakeholders.

## Conclusions

Preliminary examination of scenarios suggests that the concepts of complex adaptive systems, social-ecological systems, institutions, networks, capacity, adaptation and others associated with interactive governance may prove useful for research. Network and institutional analysis are promising methods. Yet it is too early to judge whether they will also be of practical value for addressing issues of small-scale fisheries governance in the eastern Caribbean. Their assumed usefulness must be tested in actual governance situations in order to confirm their practical application for improving policy and governance. The application of research to improve policy is of critical importance in this sub-region and such an undertaking is likely to require long term commitment such as being initiated through the MarGov project.

All of these scenarios need to be more thoroughly researched. Means of improvement must be tested in policy experiments. Bottom-up participatory experiments incorporate learning and fundamental aspects of building adaptive capacity at the local level by working with fisherfolk organisations and other community groups. Perhaps the notion of enabling policy may readily be accepted by policy-makers. However, stakeholders in governance with limited resources and capacities may be reluctant to invest in change and adaptation unless new concepts and practices have already been researched and tested to some extent through a transparent process in which they, or others in their social network, have participated. This iterative process of researching, testing, learning and policy re-design necessitates a long term programme of governance research and development. Providing such a programme for the eastern Caribbean is one of the goals of CERMES.

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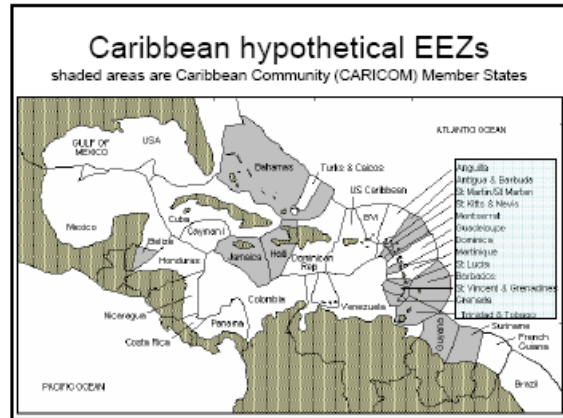
# Appendix: Slide presentation

**Fisheries governance in the eastern Caribbean: network and institutional perspectives on policy**

**Patrick McConney and Kemraj Parsram**

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*MARE IV 'People and the Sea: New Directions in Coastal and Maritime Studies', 5-7 July 2007  
Amsterdam, The Netherlands*



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**IDRC** **CRDI**  
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**Marine Resource Governance in the Eastern Caribbean (MarGov Project)**

- Marine Resource Governance in the Eastern Caribbean (MarGov Project), 4yr, IDRC
- Research on understanding governance related to small-scale fisheries and coastal management in the eastern Caribbean.
- Conceptual framework derived from complex adaptive system (CAS) and social-ecological system (SES) perspectives using network analysis at different scales and levels

**Observation for investigation**

- Governance of small-scale fisheries in the eastern Caribbean often lacks the interactions among stakeholders needed to sustain fisheries policy and management initiatives
- Interactive governance: total set of interactions between the governing system and system to be governed

**Caribbean small-scale fish chain**

**A few of the many SSF issues**

- weak institutions (for policy decision-making)
- poor leadership (of State and NGO bodies)
- inadequate information (for many decisions)
- limited capacity (many dimensions relevant)

## A few more of the many SSF issues

- low status fisheries authority (limited power)
- weak links to public policy (not integrated)
- weak links to resource users (participation)
- marginalisation of SSF in ICM (by tourism)

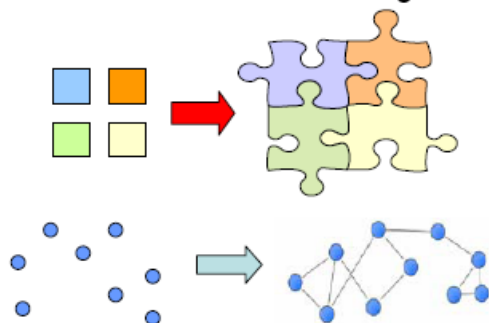


## Approach: research and policy

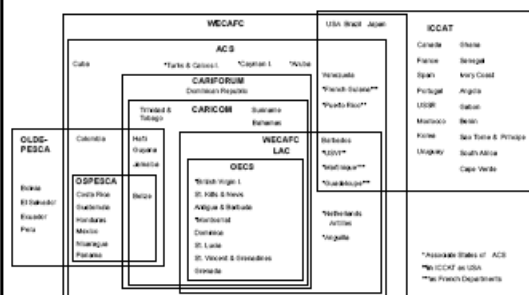
- Analyse fisheries governance and policy as CAS, SES, networks and institutions
- Build adaptive capacity through learning
- Strengthen networks for better policies
- Promote good (interactive) governance



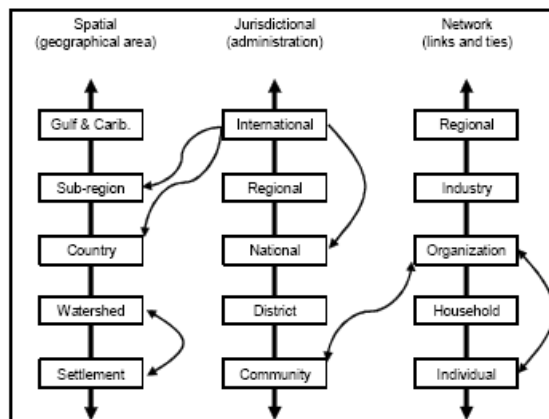
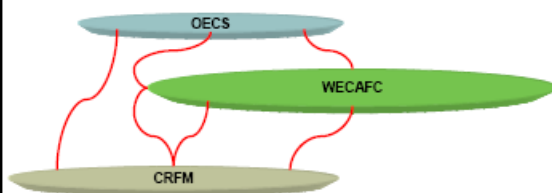
## Models of interaction and integration

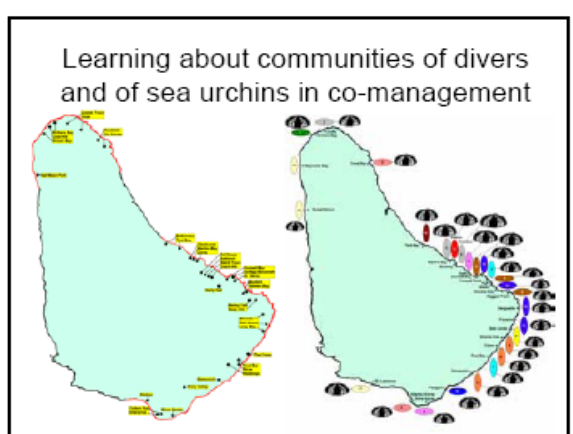
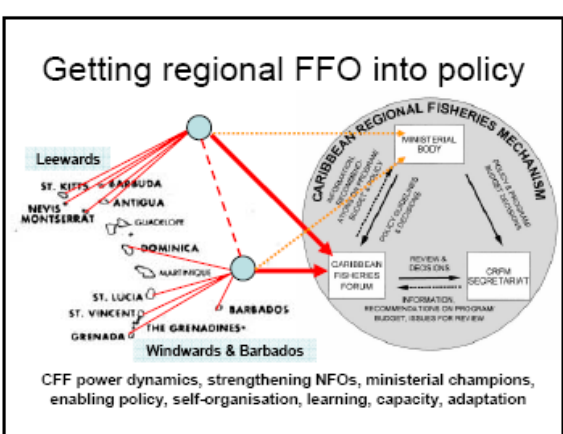
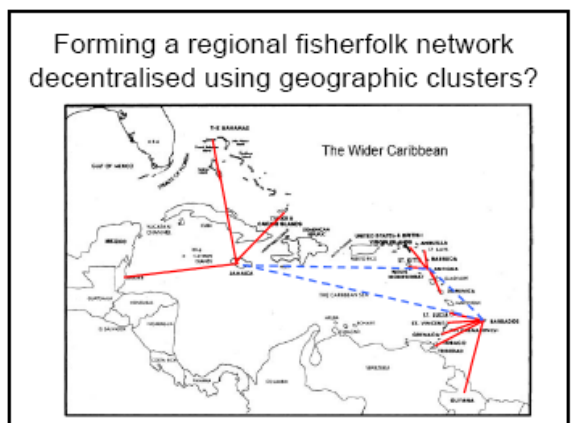
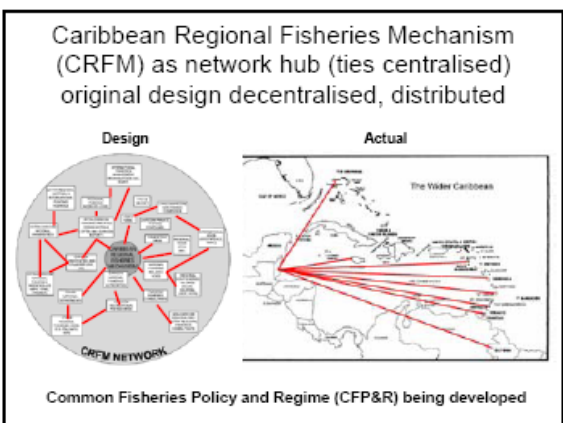
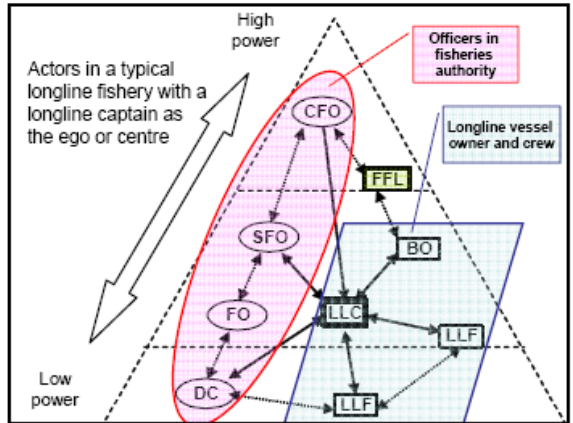
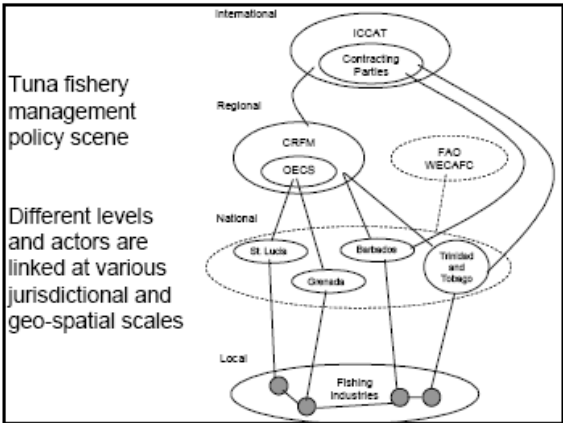


## Organisation mapping



Much overlap, but are ties sparse or dense, collaborative or conflicting?







### ...with positive impact on livelihoods

Collaborative research and information generation led to fishery opening, change in fishery policy ...

but what lessons learned?

- ### Concluding comments
- Complex adaptive systems, social-ecological systems, institutions, networks, capacity and learning for adaptation are useful concepts
  - Must test usefulness in SSF governance
  - Need a practical 'toolbox' for governance ... and questions ...
  - Does success lead to learning, adaptation?
  - Is enabling policy for governance complex?
  - What are limits to interactive governance?